ZONE _____ OF _____ ZONES

FIRE/SMOKE ZONE* EVALUATION WORKSHEET FOR HEALTH CARE FACILITIES

1981 LIFE SAFETY CODE

FACILITY	BUILDING
ZONE(S) EVALUATED	
PROVIDER/VENDOR NO.	DATE OF SURVEY

COMPLETE THIS WORKSHEET FOR EACH ZONE. WHERE CONDITIONS ARE THE SAME IN SEVERAL ZONES, ONE WORKSHEET CAN BE USED FOR THOSE ZONES.

Step 1: Determine Occupancy Risk Parameter Factors - Use Table 1.

A. For each Risk Parameter in Table 1, select and circle the appropriate risk factor value. Choose only one for each of the five Risk Parameters.

TABLE 1. OCCUPANCY RISK PARAMETER FACTORS

RISK PARAMETERS	RISK FACTORS VALUES					
1. PATIENT MOBILITY (M)	MOBILITY STATUS	MOBILE	LIMITED MOBILE	NOT MOBILE	NOT MOVABLE	
	RISK FACTORS	1.0	1.6	3.2	4.5	
2. PATIENT DENSITY (D)	PATIENT	1 – 5	6 – 10	11 – 30	> 30	
	RISK FACTOR	1.0	1.2	1.5	2.0	
3. ZONE LOCATION (L)	FLOOR	1st	2nd or 3rd	4th to 6th	7th & ABOVE	BASE-MENTS
	RISK FACTOR	1.1	1.2	1.4	1.6	1.6
4. RATIO OF PATIENTS TO ATTENDANTS (T)	PATIENTS ATTENDANT	1 – 2 / 1	3 – 5 / 1	6 – 10 / 1	> 10 / 1	ONE OR MORE NONE†
	RISK FACTORS	1.0	1.1	1.2	1.5	4.0
5. PATIENT AVERAGE AGE (A)	AGE	UNDER 65 YRS. & OVER 1 YR.		65 YRS. & OVER 1 YR. & YOUNGER		
	RISK FACTOR	1.0		1.2		

† RISK FACTOR OF 4.0 IS CHARGED TO ANY ZONE THAT HOUSES PATIENTS WITHOUT ANY STAFF IN IMMEDIATE ATTENDANCE

Step 2: Compute Occupancy Risk Factor (F) - Use Table 2.

A. Transfer the circled risk factor values from Table 1 to the corresponding blocks in Table 2.

B. Compute F by multiplying the risk factor values as indicated in Table 2.

TABLE 2. OCCUPANCY RISK FACTOR CALCULATION

	M		D		L		T		A		F
OCCUPANCY RISK	☐	X	☐	X	☐	X	☐	X	☐	=	☐

Step 3: Compute Adjusted Building Status (R) - Use Table 2.

A. If building is classified as “NEW" use Table 3A. If building is classified as "Existing" use Table 3B.

B. Transfer the value of F from Table 2 to Table 3A or Table 3B as appropriate. Calculate R.

C. Transfer R to the block labeled R in Table 7 on page 4 of the worksheet.

TABLE 3A. (NEW BUILDINGS)

	F		R
1.0 X	☐	=	☐

TABLE 3B. (EXISTING BUILDINGS)

	F		R
0.6 X	☐	=	☐

*** FIRE/SMOKE ZONE is a space separated from all other spaces by floors, horizontal exits, or smoke barriers.**

SURVEYOR SIGNATURE	TITLE	DATE
FIRE AUTHORITY SIGNATURE	TITLE	DATE

Step 4: Determine Safety Parameter Values - Use Table 4.

A. Select and circle the safety value for each safety parameter in Table 4 that best describes the conditions in the zone. Choose only one value for each of the 13 parameters. If two or more appear to apply, choose the one with the lowest point value.

TABLE 4.	SAFETY PARAMETERS VALUES						
PARAMETERS	**PARAMETERS VALUES**						
1. CONSTRUCTION	COMBUSTIBLE (TYPE III, IV AND V)				NON-COMBUSTIBLE (TYPE I AND II)		
FLOOR OF ZONE	000 (U)	111	200 (U)	211 + 2HH	000 (U)	111	222, 332, 443
FIRST	-2	0	-2	0	0	2	2
SECOND	-7	-2	-4	-2	-2	2	4
THIRD	-9	-7	-9	-7	-7	2	4
FOURTH & ABOVE	-13	-7	-13	-7	-9	-7	4
2. INTERIOR FINISH (Corridors & Exits)	CLASS C	CLASS B	CLASS A				
	-5	0	3				
3. INTERIOR FINISH (Rooms)	CLASS C	CLASS B	CLASS A				
	-3	1	3				
4. CORRIDOR PARTITIONS/WALLS	NONE OR INCOMPLETE	< 1/3 H.R.	≥ 1/3 < 1.0 H.R.	> 1.0 H.R.			
	-10 (0) a	0	1 (0)a	2 (0)a			
5. DOORS TO CORRIDOR	NO DOOR	< 20 MIN FR.	≥ 20 MIN FR.	≥ 20 MIN. FR & AUTO CLOS			
	-10	0	1 (0) d	2 (0) d			
6. ZONE DIMENSIONS	DEAD END			NO DEAD END > 30' & ZONE LENGTH IS:			
	> 100'	50' – 100'	30' – 50'	> 150'	100' – 150'	< 100'	
	-6 (0) b	-4 (0) b	-2 (0) b	-2	0	1	
7. VERTICAL OPENINGS	OPEN 4 OR MORE FLOORS	OPEN 2 OR 3 FLOORS		ENCLOSED WITH INDICATED FIRE RESIST.			
				< 1 H.R.	≥ 1 H.R. < 2 H.R.	≥ 2 H.R.	
	-14	-10		0	2 (0) e	3 (0) e	
8. HAZARDOUS AREAS	DOUBLE DEFICIENCY			SINGLE DEFICIENCY		NO DEFICIENCIES	
	IN ZONE	OUTSIDE ZONE		IN ZONE	IN ADJACENT ZONE		
	-11	-5		-6	-2	0	
9. SMOKE CONTROL	NO CONTROL	SMOKE PARTITION SERVES ZONE		MECH. ASSISTED SYSTEMS BY ZONE			
	-5 (0) f	0		3			
10. EMERGENCY MOVEMENT ROUTES	< 2 ROUTES	MULTIPLE ROUTES					
		DEFICIENT		W/O HORIZONTAL EXIT(S)	HORIZONTAL EXIT(S)	DIRECT EXIT(S)	
	-8	-2		0	3	5	
11. MANUAL FIRE ALARM	NO MANUAL FIRE ALARM			MANUAL FIRE ALARM			
	-4			W/O F.D. CONN.	W/F.D. CONN.		
				1	2		
12. SMOKE DETECTION & ALARM	NONE	CORRIDOR ONLY	ROOMS ONLY	CORRIDOR & HABIT. SPACE	TOTAL SPACE IN ZONE		
	0	2	3	4	5		
13. AUTOMATIC SPRINKLERS	NONE	CORRIDOR & HABIT. SPACE	ENTIRE BUILDING				
	0	8	10				

NOTE: a. Use (0) when item 5 is -10
b. Use (0) when item 10 is -8
c. Use (0) on floor with less than 31 patients (existing buildings only)
d. Use (0) when item 4 is -10
e. Use (0) when item 1 is based on first floor zone or on an unprotected type of construction (columns marked “U”)

Conversion ft. x .3048 = m

Step 5: Compute Individual Safety Evaluations - Use Table 5.

A. Transfer each of the 13 circled Safety Parameter Values from Table 4 to every unshaded block in the line with the corresponding Safety Parameter in Table 5. For Safety Parameter 13 (Sprinklers) the value entered in the People Movement Safety column is recorded in Table 5 as 1/2 the corresponding value circled in Table 4.

B. Add the four columns, keeping in mind that any negative numbers deduct.

C. Transfer the resulting total values for S_1, S_2, S_3, S_G to blocks labeled S_1, S_2, S_3, S_G in Table 7 on page 4 of this sheet.

TABLE 5. INDIVIDUAL SAFETY EVALUATIONS

SAFETY PARAMETERS	CONTAINMENT SAFETY (S_1)	EXTINGUISHMENT SAFETY (S_2)	PEOPLE MOVEMENT SAFETY (S_3)	GENERAL SAFETY (S_G)
1. CONSTRUCTION				
2. INTERIOR FINISH (Corr. & Exit)				
3. INTERIOR FINISH (Rooms)				
4. CORRIDOR PARTITIONS/WALLS				
5. DOORS TO CORRIDOR				
6. ZONE DIMENSIONS				
7. VERTICAL OPENINGS				
8. HAZARDOUS AREAS				
9. SMOKE CONTROL				
10. EMERGENCY MOVEMENT ROUTES				
11. MANUAL FIRE ALARM				
12. SMOKE DETECTION & ALARM				
13. AUTOMATIC SPRINKLERS			+2 =	
TOTAL VALUE	S_1 =	S_2 =	S_3 =	S_G =

Step 6: Determine Mandatory Safety Requirement Values - Use Table 6.

A. Using the classification of the building (i.e., New or Existing) and the floor where the zone is located circle the appropriate value in each of the three columns in Table 6.

B. Transfer the three circled values from Table 6 to the blocks marked S_a, S_b, and S_c in Table 7.

TABLE 6.	**MANDATORY SAFETY REQUIREMENTS**					
	CONTAINMENT (S_a)		EXTINGUISHMENT (S_b)		PEOPLE MOVEMENT (S_c)	
ZONE LOCATION	NEW	EXIST.	NEW	EXIST.	NEW	EXIST.
FIRST FLOOR	9	5	6(4)*	4	6(4)*	1
ABOVE OR BELOW 1ST FLOOR	14	9	8(6)*	6	9(7)*	3
OVER 75 FT. (23 M) IN HEIGHT	14	9	18(16)*	6	10(8)*	3

* Use value in parentheses ( ) for hospitals.

Step 7: Evaluation of Fire Safety Equivalency - Use Table 7.

A. Perform the indicated subtractions in Table 7. Enter the difference in the appropriate answer blocks.

B. For each row check "Yes" if the value in the answer block is zero or greater. Check "No" if the value in the answer block is a negative number.

TABLE 7.		**ZONE SAFETY EQUIVALENCY EVALUATION**				**YES**	**NO**
CONTAINMENT SAFETY (S_1)	less	MANDATORY CONTAINMENT (S_a)	≥ 0	S_1 - S_a = C			
EXTINGUISHMENT SAFETY (S_2)	less	MANDATORY EXTINGUISHMENT (S_b)	≥ 0	S_2 - S_b = E			
PEOPLE MOVEMENT SAFETY (S_3)	less	MANDATORY PEOPLE MOVEMENT (S_c)	≥ 0	S_3 - S_c = P			
GENERAL SAFETY (S_G)	less	OCCUPANCY RISK (R)	≥ 0	S_G - R = G			

CONCLUSIONS

1. ☐ All of the checks in Table 7 are in the "Yes" column. The level of fire safety is at least equivalent to that prescribed by the Life Safety Code.*

2. ☐ One of more of the checks in Table 7 are in the "No" column. The level of fire safety is not shown by this system to be equivalent to that prescribed by the Life Safety Code.*

*The equivalency covered by this worksheet includes the majority of considerations covered by the Life Safety Code. There are a few considerations that are covered in the "Facility Fire Safety Requirements Worksheet," (Table 8). One copy of this separate worksheet is to be completed for each facility.